

CIRCULATION COPY



**JOHN F. KENNEDY
SPACE CENTER**

TCP NO. SV-45106

DATE DECEMBER 29, 1972

REVISION ORIGINAL

EFFECTIVITY SKYLAB 2

**SKYLAB 2
SPACE VEHICLE
TRANSFER OPERATIONS
PAD TO VAB (BP-30)**

**RELEASED
FOR AS-206**

**THIS TCP CONTAINS
HAZARDOUS OPERATIONS**

TCP NO. SV-45106
DATE DECEMBER 29, 1972
REVISION ORIGINAL
EFFECTIVITY SKYLAB 2

**SKYLAB 2
SPACE VEHICLE
TRANSFER OPERATIONS
PAD TO VAB (BP-30)**

**THIS TCP CONTAINS
HAZARDOUS OPERATIONS**

NASA CONCURRENCE/APPROVAL

D. E. Jarrett 12-22-72
PREPARED BY.
TEST INTEGRATION BRANCH (LA-PLN-1)

P. C. Connelly
P. C. CONNELLY
MANAGER, TEST OPERATIONS (LA-OPN)
Charles R. Conley
KSC SAFETY OFFICE 12-27-72

R. E. Moser 12/26/72
for R. E. MOSER
MANAGER, TEST PLANNING (LA-PLN)

TABLE OF CONTENTS

<u>TITLE</u>	<u>PAGE</u>
TABLE OF CONTENTS	1
LIST OF EFFECTIVE PAGES	2
REVISION RECORD PAGE	3
TEST OUTLINE	4
LIST OF REFERENCES	7
ACCESS CONTROL	8
INTERCOMMUNICATIONS INFORMATION	9
OIS RF CHANNELIZATION LC-39	14
OPERATING STATIONS	15
OTV AND AAS CAMERA LOCATIONS	18
LIST OF ABBREVIATIONS/ACRONYMS	19
FLOW PLAN FOR TRANSFER OPERATIONS PAD TO VAB	26
SV TRANSFER OPERATIONS - PAD TO VAB OPERATING STEPS	27
APPENDIX A EMERGENCY COMMUNICATIONS PROCEDURES	39

SV TRANSFER PAD TO VAB (BP-30)
DATE: DECEMBER 29, 1972
REVISION ORIGINAL

APOLLO/SATURN

PAGE 2
TEST NO.
VEHICLE

SV-45106
SKYLAB 2

LIST OF EFFECTIVE PAGES

TOTAL NUMBER OF PAGES IN THIS DOCUMENT IS 42 CONSISTING OF THE
FOLLOWING:

<u>PAGE NUMBFR</u>	<u>ISSUE</u>
1	ORIGINAL
1 THRU 41	ORIGINAL

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE

3
SV-45106
SKYLAB 2

DATE:
REVISION

REVISION RECORD PAGE

REVISION

REASON/SUPPORTING DOCUMENTATION

TEST OUTLINE

SPACE VEHICLE TRANSFER PAD TO VAB (BP-30)

A.1 OPERATIONS OBJECTIVES

TO SAFELY PREPARE AND TRANSFER THE SPACE VEHICLE/ML FROM THE PAD TO THE VAB.

A.2 CRITERIA AND CONSTRAINTS

A.2.1 GENERAL

THE CRITERIA AND CONTRAINTS PROVIDE GUIDELINES UPON WHICH A DECISION OF TRANSFER THE SPACE VEHICLE FROM THE PAD TO THE VAB WILL BE BASED.

A.2.2 WEATHER CRITERIA

A.2.2.1 WEATHER BRIEFINGS

WHILE THE SPACE VEHICLE IS AT THE PAD, THE LAUNCH OPERATIONS MANAGER AND REPRESENTATIVES OF THE TEST TEAM WILL BE BRIEFED ON WEATHER FORECAST ONCE A DAY (OR AS REQUIRED) BY THE KSC STAFF METEOROLOGIST, OTHER WEATHER FACTORS WILL BE EVALUATED AND THE DECISION TO MOVE, AS INFLUENCED BY THESE OTHER FACTORS, WILL BE MADE BY THE LAUNCH DIRECTOR.

A.2.2.2 HURRICANE CONDITIONS

HURRICANE CONDITIONS ARE CLASSIFIED INTO FOUR CATEGORIES, BASED ON ESTIMATED 50-KNOT OR GREATER WINDS (STEADY STATE) FORECASTED TO ARRIVE AS FOLLOWS

- A. WITHIN 72 HOURS - HURRICANE CONDITION IV
- B. WITHIN 48 HOURS - HURRICANE CONDITION III
- C. WITHIN 24 HOURS - HURRICANE CONDITION II
- D. WITHIN 12 HOURS - HURRICANE CONDITION I

DECEMBER 29, 1972

APOLLO/SATURN

PAGE
TEST NO.
VEHICLESV-45106
SKYLAB 2DATE:
REVISION

ORIGINAL

A.2.2.3 WIND CONSTRAINTS

THE WIND CONSTRAINTS FOR TRANSFERRING THE ML (WITH VEHICLE) FROM THE PAD TO THE VAB IS 32.1 KNOT GUSTS AT 30 FEET ABOVE MEAN SEA LEVEL (EQUIVALENT TO 50 KNOTS AT THE 200 FOOT LEVEL). WIND CONSTRAINTS FOR THE MSS WHILE MOVING ON THE TRANSPORTER ARE 40.3 KNOTS GUSTS OR 28.5 KNOTS STEADY STATE WIND AT THE 30' LEVEL.

THE SPACE VEHICLE WHEN AT THE PAD IS LIMITED TO THE FOLLOWING SURFACE WIND RESTRICTIONS REFERENCED TO 530 FT. ABOVE NATURAL GRADE. SPECIFIC WIND VALUES ARE FOR THE WORST WIND DIRECTION; ALL BENDING MOMENTS ARE REFERENCED AT STATION 962 (S-1B SPIDER BEAM AREA).

- A. MSS AT PAD WITH AUXILIARY DAMPER ATTACHED - 53 KNOTS PEAK WIND VELOCITY; 20 MILLION IN-LBS PEAK BENDING MOMENT,
- B. MSS REMOVED WITH PRIMARY DAMPER ATTACHED - 53 KNOTS PEAK WIND VELOCITY; 17 MILLION IN-LBS PEAK BENDING MOMENT,
- C. SV FULLY LOADED WITH LV PROPELLANTS AND WITH DAMPER DISCONNECTED - 56 KNOTS PEAK WIND VELOCITY; 15 MILLION IN-LBS PEAK BENDING MOMENT.

THE SPACE VEHICLE SHOULD NOT BE EXPOSED TO WINDS THAT RESULT IN EXCEEDING THE SPECIFIC PEAK BENDING MOMENTS. SERVICE ARM #9 SHOULD BE DISCONNECTED BEFORE EXCEEDING THE SPECIFIED PEAK BENDING MOMENTS IN ORDER TO PREVENT DAMAGE TO THE SPACE VEHICLE. THE BENDING MOMENTS LIMITS WILL NOT BE EXCEEDED IF THE SPECIFIED WIND VALUES AT THE 530 FT. LEVEL ARE OBSERVED. THE SPECIFIED PEAK WIND VELOCITY VALUES ARE REPRESENTATIVE AND DO NOT NECESSARILY REFLECT TRUE SPACE VEHICLE STRUCTURAL LIMITS. THESE WIND VALUES WILL BE USED ONLY IF THE MEASURED BENDING MOMENTS IS UNAVAILABLE.

A.3 OPERATIONS DESCRIPTION
-----A.3.1 FLOW PLAN

THE FLOW PLAN FOR THIS OPERATION IS THE OPERATIONS INTERFACE CONTROL CHART - TRANSFER OPERATIONS, PAD TO VAB WHICH ESTABLISHES THE SEQUENCING OF MAJOR OPERATIONS/ACTIVITIES AND IS THE BASELINE FOR PREPARATION OF PROCEDURES. THE TIME REQUIRED TO ACCOMPLISH EACH OF THE DEFINED ACTIVITIES IS BASED ON SV/ML MOVE EXPERIENCE ACQUIRED TO DATE. THE SEQUENCE OF INTEGRATED TRANSFER ACTIVITIES IS COMPRESSED INTO THE MAXIMUM NUMBER OF PARALLEL ACTIVITIES PERMITTED BY SAFETY CONSIDERATIONS AND TAKES INTO ACCOUNT MANPOWER, SHIFT CONSIDERATIONS, AND TIME-OF-DAY OF OPERATIONS.

A.3.2 SAFETY

THE GROUND SAFETY PLAN, K-V-053, WILL APPLY DURING THIS OPERATION.

THIS TRANSFER OPERATION IS CONSIDERED TO BE HAZARDOUS. PERSONNEL ALLOWED IN THE DANGER AREA WILL BE CONTROLLED AND RESTRICTED. IN THE EVENT OF AN ELECTRICAL STORM IN THE AREA, ADDITIONAL HAZARDS TO PERSONNEL WILL EXIST AS DEFINED IN GROUND SAFETY PLAN, VOL. II (SOP VAB-SV-1).

THE FOLLOWING CONDITIONS ARE CONSIDERED TO CREATE A HAZARD TO PERSONNEL INVOLVED IN THE TRANSFER OPERATION OF THE SV/ML.

- A. CRAWLER HIGH PRESSURE HYDRAULICS AND CRAWLER OPERATION
- B. PLATFORM RETRACTION AND EXTENSION
- C. HIGH WIND HAZARDS
- D. WORK AT HEIGHTS
- E. ELECTRICAL STORM HAZARDS

A.4

OUTLINE OF OPERATIONS

INTEGRATED OPERATIONS WILL BEGIN WITH HOLDDOWN ARMS AND SHORT CABLE MAST SECURING, S-IB, S-IVB AND IU STAGE SECURING, PAD TO ML LV LH2 AND RP-1 LINE DISCONNECTIONS AND PAD TO ML LOX LINE DISCONNECTIONS. THE ENGINE SERVICE PLATFORM (ESP) TRANSPORTER WILL BE MOVED TO THE NORTH SIDE OF THE PAD. THE SERVICE ARM TIPS WILL BE RETRACTED, AND SERVICE ARMS SECURED. THE 9099 INTERFACE WILL BE DISCONNECTED AND THE LV AND CM ENVIRONMENTAL CONTROL SYSTEMS SECURED.

FINAL ML PREPS FOR MOVE WILL CONTINUE WITH THE TERMINATION AND DISCONNECTION OF ML/PAD GHE, O2/N2 LINES, FACILITY AIR AND ML GN2, DELUGE WATER WILL BE DISCONNECTED FOLLOWED BY THE TRANSFER OF ML POWER FROM PAD TO CT. AND THE CONFIGURING OF ML OIS FROM HARDLINE TO UHF. THE ML/CT WILL BE JACKED UP AND MOVED TO THE VAB

UPON ARRIVAL, THE ML/CT WILL BE MOVED INSIDE THE VAB AND POSITIONED OVER THE MOUNT MECHANISMS. THE MOUNT MECHANISMS WILL BE ADJUSTED AND THE ML/CT JACKED DOWN. REQUIRED POWER PNEUMATICS, COMM, WATER, AND FACILITIES WILL BE CONNECTED. IN ADDITION, THE 9099 INTERFACE AND ECS DUCTS WILL BE CONNECTED.

A.5

OPERATIONS CONFIGURATION

SPACE VEHICLE/ML AT THE PAD.

MSS AT PARK SITE

DECEMBER 29, 1972

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE7
SV-45106
SKYLAB 2DATE:
REVISION

ORIGINAL

LIST OF REFERENCES

1. LAUNCH VEHICLE RETURN TO VAB.
2. SPACECRAFT OPERATIONS FOR SPACE VEHICLE RETURN TO VAB.
3. SKYLAB SPACE VEHICLE TRANSFER OPERATIONS PAD TO VAB
INTERFACE CONTROL CHART.
4. TEST AND CHECKOUT PLAN.
5. SKYLAB 1/SKYLAB 2 LC-39 LAUNCH OPERATIONS INSTRUCTIONS,
KHB 8635.4/L0.
6. SPACE VEHICLE TEST SUPERVISOR EMERGENCY PROCEDURES.
7. CAMERA OVERRIDE CONTROL SYSTEM GROUND RULES AND
PROCEDURES, 630-40-0009.
8. KSC APOLLO/SKYLAB CALL SIGN HANDBOOK, 630-23-0001.
9. GROUND SAFETY PLAN, KV-053.
10. SECURITY PLAN, KV-052.
11. SKYLAB PART 1 RD, 20003

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

PAGE 1
TEST NO.
VEHICLE

8
SV-45106
SKYLAB 2

DATE
REVISION

ACCESS CONTROL

CONTROL OF PERSONNEL IN THE LAUNCH COMPLEX 39 OPERATIONAL AREA IS MANDATORY DUE TO HAZARDOUS CONDITIONS.

THE CONTROL OF PERSONNEL IN THE OPERATIONAL AREA IS UNDER THE DIRECTION OF THE TEST SUPERVISOR. THE GROUND SAFETY PLAN AND THE SKYLAB SECURITY PLAN WILL GOVERN DURING THE SPACE VEHICLE LAUNCH COUNTDOWN. THE NUMBER OF PERSONNEL EXPOSED TO HAZARDOUS OPERATIONS WILL BE CONTROLLED BY THE HAZARDOUS OPERATIONS MANLOADING DOCUMENT, AS APPROVED BY THE TEST SUPERVISOR AND KSC SAFETY FOR ALL OPERATIONS. ANY CHANGES TO MANLOADING DURING THE PERFORMANCE OF THE TEST/OPERATION MUST HAVE THE CONCURRENCE OF THE KSC SAFETY REPRESENTATIVE.

DECEMBER 29, 1972

APOLLO/SATURN

PAGE

9
SV-45106
SKYLAB 2

TEST NO.

VEHICLE

DATE:

REVISION

ORIGINAL

INTERCOMMUNICATIONS INFORMATION

ALL-AREA-PAGING EM PA

TO BE USED FOR ALL AREA ANNOUNCEMENTS SUCH AS, PERSONNEL CLEARING FOR ORDNANCE OPERATIONS IN THE VAB OR FOR EMERGENCIES. (THE TOGGLE SWITCH FOR THE MICROPHONE ON THE TEST SUPERVISOR'S CONSOLE WILL BE IN THE EMERGENCY POSITION.)

PAGING (CH.) 188 (PA)

TO BE USED FOR OPERATIONAL ANNOUNCEMENTS WITHIN THE OPERATIONAL AREA OF A SPECIFIC OIS MISSION BUS. PA OPERATES AT LAUNCH COMPLEX 39, INCLUDING THE VAB, LCC, AND PADS, PA DOES NOT GO TO THE CIF OR Q&C BUILDINGS.

OPERATIONAL INTERCOMMUNICATIONS SYSTEM (OIS)

THE TEST AND CHECKOUT OPERATIONAL COMMUNICATIONS ARE UTILIZED AS ASSIGNED OR INDICATED IN THE PROCEDURE FOR THE TEST OPERATIONS. COORDINATION BY THE SPACE VEHICLE TEST SUPERVISOR WILL NORMALLY BE CONDUCTED OVER OIS CHANNEL 181. IF THE TEST SUPERVISOR IS UNABLE TO REACH AN ORGANIZATION ON OIS CHANNEL 181, ONLY THEN WILL HE SWITCH TO THAT ORGANIZATION'S PRIMARY ASSIGNED CHANNEL. TEST SUPERVISORY PERSONNEL SHOULD ALWAYS BE AVAILABLE ON THE FOLLOWING CIRCUITS

SPACE VEHICLE TEST SUPERVISOR (NASA-LO)	181
TEST SUPPORT CONTROLLER (NASA-TS)	121
LAUNCH VEHICLE TEST CONDUCTOR (NASA-LV)	261
CSM SPACECRAFT TEST CONDUCTOR (NASA-LS)	212
SYSTEMS SAFETY (NASA-SF)	125
S-IB TEST CONDUCTOR (CHRYSLER)	231
GSE TEST CONDUCTOR (BOEING)	266
S-IVB TEST CONDUCTOR (MDAC)	241
IU TEST CONDUCTOR (IBM)	251
INSTRUMENTATION CONTROLLER (NASA-IN)	116
SUPPORT CONTROLLER (NASA-SO)	122
INSTALLATION SUPPORT CONTROLLER (NASA-IS)	114

SPACE VEHICLE TEST SUPERVISOR OIS SPECIAL COORDINATION CHANNEL

CHANNEL 174 HAS BEEN DELEGATED TO THE SV TEST SUPERVISOR AS AN AUXILIARY CHANNEL. THIS CHANNEL, WHICH IS CO-SHARED WITH ATM A & PCS, MAY BE UTILIZED AT THE DISCRETION OF THE SV TEST SUPERVISOR TO RESOLVE PROBLEMS INVOLVED WITH TEST SUPPORT ACTIVITIES AND FOR CONFERENCE DISCUSSIONS WITH THE KSC WEATHER STATION.

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

PAGE 10
TEST NO.
VEHICLE

SV-45106
SKYLAB 2

DATE:
REVISION

SUPERINTENDENT OF RANGE OPERATIONS (SRO)

THE SRO HAS ACCESS TO OIS CHANNELS 181, 121, 261, AND 264. THE TEST SUPERVISOR WILL REQUEST THE SRO TO SWITCH TO ONE OF THESE CHANNELS WHEN HIS ACTIVE PARTICIPATION IS REQUIRED. NORMALLY, THE SRO WILL MONITOR ROUTINE TEST COMMUNICATIONS WITH THE TEST SUPERVISOR.

PAD TEST SUPERVISOR (PVTS)

AN ASSISTANT TEST SUPERVISOR WILL BE LOCATED AT THE PAD DURING TIMES OF OPEN PAD CONDITIONS TO MONITOR THE OPERATIONS AND ASSESS PROBLEM AREAS FOR THE TEST SUPERVISOR. HE WILL COORDINATE OPERATIONS AT THE PAD FOR THE TEST SUPERVISOR AND WILL UTILIZE OIS CHANNEL 181.

OIS SYSTEM TROUBLE REPORTING

TO REPORT TROUBLES OR REQUEST ASSISTANCE IN THE USE OF THE OIS SYSTEM, CONTACT JROL (ALL AREAS) OR YROL (O&C, CIF) ON OIS CHANNEL 117. IF TROUBLE PREVENTS USE OF OIS CONTACT COMMUNICATIONS CONTROL CONSOLE ON 867-4141.

SKYLAB
 TRANSFER OIS COMMUNICATION ASSIGNMENTS

```

*****
* CH. 111                      * CH. 121                      *
*                               *                               *
* TEST SUPPORT                 * SERVICE ARM MECHANIC, *
* CONTROLLER                   * LAUNCHER SYSTEMS    *
*                               *                               *
*                               TS *                               LV *
*****
* CH. 112                      * CH. 122                      *
*                               *                               *
* SUPPORT CONTROLLER          * SUPPORT OPERATIONS, *
*                               * LAUNCHER SYSTEMS    *
*                               *                               *
*                               SO *                               SO *
*****
* CH. 113                      *                               *
*                               *                               *
* TEST SUPERVISOR/LAUNCH      *                               *
* VEHICLE TEST CONDUCTOR      *                               *
*                               LO/LV *                               *
*****
* CH. 114                      *                               *
*                               *                               *
* LAUNCH VEHICLE STAGE        *                               *
* TEST CONDUCTORS             *                               *
*                               LV *                               *
*****
* CH. 115                      *                               *
*                               *                               *
* OBSERVERS AND CRAWLER       *                               *
* OPERATIONS                   *                               *
*                               SO *                               *
*****
* CH. 116                      *                               *
*                               *                               *
* SPACECRAFT TEST             *                               *
* CONDUCTOR                    *                               *
*                               LS *                               *
*****
* CH. 117                      *                               *
*                               *                               *
* OIS CONTROL ENGINEER,       *                               *
* OTV CONTROL ENGINEER        *                               *
*                               IN *                               *
*****
* CH. 118                      *                               *
*                               *                               *
* FACILITY & ENVIR'TAL        *                               *
* SYSTEMS, CT/ML MEAS         *                               *
*                               IN *                               *
*****

```

NOTE-- INSTRUMENTATION CONTROLLER (IN) WILL BE LOCATED DURING
 TRANSFER ON OIS CHANNEL 158, NOT ON MICROWAVE.

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

DATE:
REVISION

PAGE:
TEST NO.
VEHICLE

12
SV-45106
SKYLAB 2

HEADSET INTEGRITY CHECK

A HEADSET, HEADSET CORD, AND EXTENDER CABLE INTEGRITY CHECK WILL BE MADE BY EACH USER OF THE DIS SYSTEM EACH TIME HE COMES ON STATION TO SUPPORT THE SPACE VEHICLE LAUNCH COUNTDOWN.

WHEN COMING ON STATION, HE WILL REPORT TO HIS IMMEDIATE SUPERVISOR USING ONE OF THE FOLLOWING PROCEDURES

- A.
- IF THE HEADSET IS CONNECTED DIRECTLY TO AN DIS-RF END INSTRUMENTS
1. SELECT YOUR SUPERVISOR'S PRIME CHANNEL ON THE ACTIVE DIAL.
 2. REPORT TO YOUR SUPERVISOR STATING CALL SIGN AND POSITION.
 3. SELECT CHANNEL 274 ON THE MONITOR DIAL. A 1000 HZ TONE WILL BE HEARD.
 4. GIVE A SHORT COUNT, E.G. 1, 2, 3, 4, 5, --- 5, 4, 3, 1, 1 ON YOUR ACTIVE CHANNEL.
 5. THE SUPERVISOR MONITOR DIAL SHOULD NOT BE SET TO CHANNEL 274.

IF THE SUPERVISOR HEARS THE 1000 HZ TONE, THE HEADSET IS UNSATISFACTORY AND SHOULD BE REPORTED THROUGH ESTABLISHED CHANNELS.

IF THE SUPERVISOR DOES NOT HEAR THE 1000 HZ TONE, THE HEADSET IS SATISFACTORY.

DATE:
REVISION

B. IF THE HEADSET IS CONNECTED TO AN EXTENDER CABLE

1. REPEAT ITEMS A.1 THROUGH 5.
2. IF THE RESULTS ARE UNSATISFACTORY (SUPERVISOR HEARS 1000 HZ TONE), THE FOLLOWING IS REQUIRED TO ISOLATE THE PROBLEM TO HEADSET OR EXTENDER CABLE
 - (A) REMOVE HEADSET FROM EXTENDER CABLE AND CONNECT DIRECTLY TO NEAREST AVAILABLE OIS-RF INSTRUMENTS.
 - (B) REPEAT ITEMS A.1 THROUGH 5.
 - (C) IF RESULTS ARE STILL UNSATISFACTORY, THE PROBLEM IS IN THE HEADSET OR HEADSET CORD.
 - (D) IF THE RESULTS ARE SATISFACTORY, THE PROBLEM IS IN THE EXTENDER CABLE.

THE UNSATISFACTORY COMPONENT SHOULD BE REPORTED THROUGH ESTABLISHED CHANNELS.

NOTE

THIS CHECK IS APPLICABLE
AT THE O&C AND LC-39.

THOSE USERS HAVE AUDIO
CAPABILITY (TYPE 51
UNIT) SHOULD NOT
ACCESS ANY OIS CHANNELS
THROUGH THE AUDIO SYSTEM
FOR THIS CHECK.

END OF HEADSET INTEGRITY CHECK

DATE:
REVISION

CRYLAB OIS CHANNELIZATION

111	TS	SL-1 TEST SUPPORT CONTROLLER	121	LV	SL-1 S-1C TEST CONDUCTOR	131	LV	SL-1 S-1I CONDUCTOR	141	LV	SL-1 S-1I CONDUCTOR	151	LV	SL-1 LAUNCH VEHICLE TEST COND. R U	161	LV	SL-1 TEST SUPERVISOR	171	LV	SL-1 TEST SUPERVISOR	181	LS	SL-1 SWS ENGINEER- ING	201	LS	SL-2 CSM PAD LEADER AND O.C.	231	LV	SL-2 S-1B TEST CONDUCTOR	241	LV	SL-2 S-1VB TEST CONDUCTOR	251	LV	SL-2 S-1 TEST CONDUCTOR	261	LV	SL-2 LAUNCH VEHICLE TEST COND. R U			
112	LV	SL-2 S-1 SUPPORT CONTROLLER	122	LV	SL-1 S-1C MECHANICAL CONDUCTOR	132	LV	SL-1 S-1I MECHANICAL CONDUCTOR	142	LV	SL-1 S-1I MECHANICAL CONDUCTOR	152	LV	SL-1 S-1I MECHANICAL CONDUCTOR	162	LV	SL-1 S-1I MECHANICAL CONDUCTOR	172	LV	SL-1 S-1I MECHANICAL CONDUCTOR	182	LS	SL-2 CSM SPACECRAFT TEST COND. U	212	LS	SL-2 CSM PROJECT ENGINEER	222	LV	SL-2 S-1B MECHANICAL CONDUCTOR	232	LV	SL-2 S-1VB MECHANICAL CONDUCTOR	242	LV	SL-2 S-1 MECHANICAL CONDUCTOR	252	LV	SL-2 S-1 MECHANICAL CONDUCTOR	262	LV	SL-2 S-1 MECHANICAL CONDUCTOR
113	LV	SL-1 S-1 SUPPORT CONTROLLER	123	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	133	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	143	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	153	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	163	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	173	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	183	LS	SL-2 CSM TROUBLE SHOOTING	213	LS	SL-2 CSM ELECTRICAL POWER SYSTEM	223	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	233	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	243	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	253	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	263	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
114	LV	SL-1 S-1 SUPPORT CONTROLLER	124	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	134	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	144	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	154	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	164	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	174	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	184	LS	SL-2 CSM COMM., INST., AND BIOMED.	214	LS	SL-2 CSM FUEL CELL AND CRYO	224	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	234	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	244	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	254	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	264	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
115	LV	SL-1 S-1 SUPPORT CONTROLLER	125	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	135	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	145	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	155	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	165	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	175	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	185	LS	SL-2 CSM GEN	215	LS	SL-2 CSM STABILIZA- TION CONT.	225	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	235	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	245	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	255	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	265	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
116	LV	SL-1 S-1 SUPPORT CONTROLLER	126	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	136	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	146	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	156	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	166	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	176	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	186	LS	SL-1 AM/MDA/OWS REFG/THERM CONT SYS	216	LS	SL-2 CSM PROPULSION/ REACTION CONT. SYS	226	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	236	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	246	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	256	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	266	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
117	LV	SL-1 S-1 SUPPORT CONTROLLER	127	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	137	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	147	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	157	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	167	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	177	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	187	LS	SL-1 AM/MDA/OWS ENVIRON- MENTAL CONTROL SYSTEM	217	LS	SL-2 CSM ENVIRON- MENTAL CONTROL SYSTEM	227	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	237	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	247	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	257	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	267	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
118	LV	SL-1 S-1 SUPPORT CONTROLLER	128	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	138	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	148	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	158	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	168	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	178	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	188	LS	SL-1 AM/MDA/OWS Crew/Vent/ WASTE SYS	218	LS	SL-2 CSM ACE/GSE	228	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	238	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	248	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	258	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	268	LV	SL-2 S-1 ELECTRICAL CONDUCTOR
119	LV	SL-1 S-1 SUPPORT CONTROLLER	129	LV	SL-1 S-1C ELECTRICAL CONDUCTOR	139	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	149	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	159	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	169	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	179	LV	SL-1 S-1I ELECTRICAL CONDUCTOR	189	LS	SL-1 AM/MDA/OWS Crew/Vent/ WASTE SYS	219	LS	SL-2 CSM ACE/GSE	229	LV	SL-2 S-1B ELECTRICAL CONDUCTOR	239	LV	SL-2 S-1VB ELECTRICAL CONDUCTOR	249	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	259	LV	SL-2 S-1 ELECTRICAL CONDUCTOR	269	LV	SL-2 S-1 ELECTRICAL CONDUCTOR

NOTZ 11: Ch. 182 will be available for "CSM AEROMED."

starting at SL-1 launch plus one hour.

NOTE 12: SL-2 Ch.

SL-3/4/R.
For SL-3/4/R, SL-1 Ch. will be available for
discretionary use by the designated directorates.

c. Available to CT/MIL by microwave during transfer operations.

Channels assigned to LV Service Arm
Service Arm activities at the pad.

R: Tied to ETR.
 U: Tied to GMIL.

OPERATING STATIONS

TEST CONDUCTORS AND TEST MANAGEMENT PERSONNEL

DLO	LAUNCH DIRECTOR (NASA)
LOM	LAUNCH OPERATIONS MANAGER (NASA)
CVTS	SPACE VEHICLE TEST SUPERVISOR (NASA)
MSTC	SPACECRAFT TEST CONDUCTOR (CSM/NASA)
CLTC	LAUNCH VEHICLE TEST CONDUCTOR (NASA)
CTSC	TEST SUPPORT CONTROLLER (NASA)
CUTC	IU STAGE TEST CONDUCTOR (IBM)
C3TC	S-IB STAGE TEST CONDUCTOR (CHRYSLER)
C1TC	GSE STAGE TEST CONDUCTOR (BOEING)
C4TC	S-IVB TEST CONDUCTOR (MDAC)
BOSC	SUPPORT CONTROLLER (NASA)
BTIS	INSTALLATION SUPPORT CONTROLLER (NASA)
CGIC	INSTRUMENTATION CONTROLLER (NASA)

SYSTEMS SAFETY

CPSS SYSTEMS SAFETY

LAUNCH OPERATIONS SECURITY

CTNS SECURITY CONTROLLER

RANGE SUPPORT

CRSS	RANGE SAFETY SUPERVISOR'S PANEL
GMIL	UNIFIED S-BAND GROUND STATION
RSO	RANGE SAFETY OFFICER
SRO	SUPERINTENDENT OF RANGE OPERATIONS

FLIGHT CONTROL (MCC)

HFLT FLIGHT DIRECTOR, HOUSTON

OPERATIONS PERSONNEL

BCMP	CSM PILOT, BACK-UP
BEACH	
BOSS	LAUNCH SITE RECOVERY FORCES COMMANDER
BGCC	GROUND COMPUTER COMPLEX FIRING ROOM
BLTM	TM SYSTEMS ENGINEER
BLRF	LV DRSCR SYSTEMS ENGINEER
BPHO	PHOTO COORDINATOR
BOTV	OTV CONTROLLER
BWIC	WIDEBAND SYSTEM CENTER/AAS POWER-RECORDER OPERATOR
BTMC	TM C/O EQUIPMENT, COMM. MODULE ROOM 2P10
CEDK	CRT KEYBOARD - EDS DCC OPERATOR
CLGK	CRT KEYBOARD - GUIDANCE COMPUTER
CLVN	VEHICLE NETWORKS CONSOLE
CSAT	TEST CONDUCTOR, S/C ASST.
CSA9	SERVICE ARM 9 CONTROL CONSOLE, COMM. MOD.
CSPP	SERVICE ARMS POWER PANEL
CSTO	ASTRO COMM.
CUES	EDS PREPARATION
CUEV	EVENTS DISPLAY (IU)
CUNP	NETWORKS PANEL
CUSW	NETWORKS SWITCH SELECTOR PANEL
CWCP	INDUSTRIAL WATER CONTROL PANEL
CLMS	MECHANICAL SYSTEMS ENGINEER
C1CS	CUTOFF SENSORS PANEL
C1DP	PROPELLANT DISPERSION AND ORDNANCE (DESTRUCT) PANEL
C1FC	FLIGHT CONTROL RECORDERS
C1FP	FIRING CONSOLE AND COMPONENT TEST PANEL
C1LO	LOX SYSTEM PANEL
C1NP	NETWORKS PANEL (S-IC)
C1PP	POWER PANEL (DC)
C1SP	SEQUENCER PANEL
C2DP	PROPELLANT DISPERSION PANEL
C1NP	NETWORKS PANEL (S-II)
ETMS	TELEMETRY GROUND STATION (CIF)
HARDTOP	PAD EGRESS TEAM COMMANDER
LIEF	LAUNCH INFORMATION EXCHANGE FACILITY
MACE	ACE TEST DIRECTOR, GE
MLFC	FUEL CELL UNIT 12, S/C
MTPE	NR TEST PROJECT ENGINEER, UNIT 10, S/C
PEHE	ENVIRONMENTAL HEALTH ENGINEER
PVSS	SYSTEMS SAFETY (PAD)
FVTS	PAD TEST SUPERVISOR

SV TRANSFER PAD TO VAB (BP-30) , APOLLO/SATURN
DATE: DECEMBER 29, 1972
REVISION ORIGINAL

PAGE 17
TEST NO. SV-45106
VEHICLE SKYLAB 2

SCDR	CSM COMMANDER
SEHZ	MSS HAZARDS MONITOR OPERATOR
UGCU	WATER GLYCOL CONTROL UNIT OPERATOR
UWGR	GLYCOL REFRIGERATION UNIT, S/C
VUMS	IU MEASURING GSE STATION
VURF	C-BAND RADAR AND CCS CHECKOUT
Z1	ABORT MONITOR VISUAL OBSERVER UC-4 (PAD A), UC-12 (PAD B)
Z2	ABORT MONITOR VISUAL OBSERVER UC-16 (PADS A & B)
Z3	ABORT MONITOR VISUAL OBSERVER UC-17 (PADS A & B)

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE

18
SV-45106
SKYLAB 2

DATE
REVISION

OTV AND AAS CAMERA LOCATIONS

CAMERA NUMBER -----	LOCATION -----	SUBJECT TO BE VIEWED -----
AAS-3	EAST SIDE OF PAD B	SPACE VEHICLE AND ML
AAS-4	WEST SIDE OF PAD B	SPACE VEHICLE AND ML
ROOF	VAB ROOF	SPACE VEHICLE AND ML

DECEMBER 29, 1972

APOLLO/SATURN

PAGE

19

SV-45106

TEST NO.

SKYLAB 2

VEHICLE

DATE:

REVISION

LIST OF ABBREVIATIONS/ACRONYMS

AAC	ABORT ADVISORY CHANNEL
AAS	ABORT ADVISORY SYSTEM
ACE	ACCEPTANCE CHECKOUT EQUIPMENT
ACS	ASTRO-COMMUNICATION SYSTEM
AFETR	AIR FORCE EASTERN TEST RANGE
AIU	ABORT INTERFACE UNIT
ALC	ASTRO LAUNCH CIRCUIT
ALDS	APOLLO LAUNCH DATA SYSTEM
ALSA	ASTRONAUT LIFE SUPPORT ASSEMBLY
AM	AMPLITUDE MODULATED; AIRLOCK MODULE
APS	AUXILIARY PROPULSION SYSTEM (SWS)
ATM	APOLLO TELESCOPE MOUNT
ATMDC	ATM DIGITAL COMPUTER
BP	BOILERPLATE
BPC	BOOST PROTECTIVE COVER
CADFISS	COMPUTATION AND DISTRIBUTION FLOW INTEGRATED SUBSYSTEM
CASTS	COUNTDOWN AND STATUS TRANSMITTING SYSTEM
CB	CIRCUIT BREAKER
CBRM	CHARGER BATTERY RELAY MODULE
CCATS	COMMUNICATIONS, COMMAND, AND TELEMETRY SYSTEM
CCC	COMPLEX CONTROL CENTER
CCF	CONVERTER COMPRESSOR FACILITY
CCS	COMMAND COMMUNICATIONS SYSTEM
C&D	CONTROL AND DISPLAY (ATM)
CD	COUNTDOWN
CD&SC	CENTRAL DATA AND SWITCHING CENTER
CDC	COUNTDOWN CLOCK
CDDT	COUNTDOWN DEMONSTRATION TEST
CDF	CONFINED DETONATING FUSE
CDU	COUPLING DATA UNIT
C2F2	CREW COMPARTMENT FIT AND FUNCTION
CH	CHANNEL
CIF	CENTRAL INSTRUMENTATION FACILITY
CIU	COMPUTER INTERFACE UNIT
CMD	COMMAND
CMGS	CONTROL MOMENT GYRO SUBSYSTEM
COAS	CREW OPTICAL ALIGNMENT SIGHT
COMM	COMMUNICATION
C/O	CHECKOUT
CRDU	COMMAND RELAY DRIVER UNIT
CRG	CONTROL RATE GYRO
CRT	CATHODE RAY TUBE
CRYO	CRYOGENIC
C/T	CRAWLER/TRANSPORTER
CRW	CAUTION AND WARNING

DECEMBER 29, 1972

APOLLO/SATURN

PAGE 1
TEST NO.
VEHICLE20
SV-45106
SKYLAB 2DATE
REVISION

DA	DEPLOYMENT ASSEMBLY
DADE	DIGITAL ACQUISITION AND DECOMMUTATION EQUIPMENT
DAS	DATA ACQUISITION SYSTEM
DB	DESIGN BURST
DC	DIRECT CURRENT
DCS	DIGITAL COMMAND SYSTEM
DDAS	DIGITAL DATA ACQUISITION SYSTEM
DEE	DIGITAL EVENTS EVALUATOR
DPDM	DOUBLE PULSE DURATION MODULATION
DPF	DIFFERENTIAL PRESSURE FEEDBACK
DRSCS	DIGITAL RANGE SAFETY COMMAND SYSTEM
DRSCR	DIGITAL RANGE SAFETY COMMAND RECEIVER
DTC	DESIGN/TEST CONTRACTOR OR CENTER
DTCS	DIGITAL TEST COMMAND SYSTEM
DTMS	DIGITAL TEST MONITORING SYSTEM
DTS	DATA TRANSMISSION SYSTEM
DTVC	DIGITAL TRANSMISSION AND VERIFICATION CONVERTER
DUA	DIGITAL UPLINK ASSEMBLY
EBW	EXPLOSIVE BRIDGE WIRE
E/C	ENVIRONMENTAL CHAMBER
ECS	ENVIRONMENTAL CONTROL SYSTEM
EDC	EXPERIMENT DEVELOPMENT CENTER
EDS	EMERGENCY DETECTION SYSTEM
EEAP	EMERGENCY EGRESS AIR PACK
EGADS	ELECTRONIC GROUND AUTOMATIC DESTRUCT SYSTEM
EIS	EXPERIMENT INTEGRATION CENTER
E-M	ELECTRO-MECHANICAL
EMC	ELECTROMAGNETIC COMPATIBILITY
EPC	EXPERIMENT POINTING CONTROL
EPS	ELECTRICAL POWER SYSTEM
ERD	EXPERIMENT REQUIREMENTS DOCUMENT
EREP	EARTH RESOURCES EXPERIMENT PACKAGE
ESE	ELECTRICAL SUPPORT EQUIPMENT
ESP	ENGINE SERVICE PLATFORM
ESS	EXPERIMENT SUPPORT SYSTEM
ETR	EASTERN TEST RANGE
EVA	EXTRAVEHICULA ACTIVITY
FAS	FIXED AIRLOCK SHROUD
FCC	FLIGHT CONTROL COMPUTER (LV)
FDS	FLUID DISTRIBUTION SYSTEM
FM	FREQUENCY MODULATION
FMS	FOOD SERVICE MANAGEMENT (OWS)
FR	FIRING ROOM (LCC)
FSRT	FLIGHT SYSTEMS REDUNDANCY TEST
FT	FUNTIONAL TEST, FOOT
FTR	FINAL TEST RACK
FWD	FORWARD

DECEMBER 29, 1972

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE21
SV-45106
SKYLAB 2DATE:
REVISION

ORIGINAL

G&C	GUIDANCE AND CONTROL
GET	GROUND ELAPSED TIME
GETS	GROUND EQUIPMENT TEST SET
GHE	GASEOUS HELIUM
GH2	GASEOUS HYDROGEN
GMT	GREENWICH MEAN TIME
GSFC	GODDARD SPACE FLIGHT CENTER
GN2	GASEOUS NITROGEN
GO2 (GOX)	GASEOUS OXYGEN
GSE	GROUND SUPPORT EQUIPMENT
HCO	HARVARD COLLEGE OBSERVATORY
HDA	HOLDDOWN ARM
HGDS	HAZARDOUS GAS DETECTION SYSTEM
HQSC	HUNTSVILLE OPERATIONS SUPPORT CENTER
HPG	HIGH PRESSURE GAS
HSS	HABITABILITY SUPPORT SYSTEM
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
H2	HYDROGEN
H2O	WATER
HZ	HERTZ (CYCLES PER SECOND)
ID	IDENTIFICATION
IEU	INTERFACE ELECTRONICS UNIT
IGOR	INTERCEPT GROUND OPTICAL RECORDER
ILCA	INVERTER LIGHT CONTROL ASSEMBLY (AM/MDA)
IMU	INERTIAL MEASURING UNIT
IP	IMPACT PREDICTOR
IRIG	INERTIAL RATE INTEGRATION GYRO; INTER-RANGE INSTRUMENTATION GROUP
IU	INSTRUMENT UNIT
IVA	INTRA VEHICULAR ACTIVITY
IWS	INDUSTRIAL WATER SYSTEM
KSC	KENNEDY SPACE CENTER
LBNP	LOWER BODY NEGATIVE PRESSURE
LBR	LOW BIT RATE
LC	LAUNCH COMPLEX
LCC	LAUNCH CONTROL CENTER
LCG	LIQUID COOLED GARMENT
LH2	LIQUID HYDROGEN
LIEF	LAUNCH INFORMATION EXCHANGE SYSTEM
LO	LAUNCH OPERATIONS
LOM	LAUNCH OPERATIONS MANAGER
L/O	LIFTOFF
LO2 (LOX)	LIQUID OXYGEN
LP	LOW PRESSURE
LRR	LAUNCH READINESS REVIEW

DATE
REVISION

LS	SPACECRAFT OPERATION (OFFICE SYMBOL)
LSC	LINEAR SHAPED CHARGE
LSE	LAUNCH SUPPORT EQUIPMENT
LSR	LAUNCH SITE RECOVERY
LUT	LAUNCH UMBILICAL TOWER
LV	LAUNCH VEHICLE
LVDA	LAUNCH VEHICLE DATA ADAPTER
LVDC	LAUNCH VEHICLE DIGITAL COMPUTER
LVO	LAUNCH VEHICLE OPERATIONS
MAP	MESSAGE ACCEPTANCE PULSE
MCC	MISSION CONTROL CENTER
MDA	MULTIPLE DOCKING ADAPTER
MDF	MILD DETONATING FUSE
MHZ	MEGA-HERTZ
MILA	MERRITT ISLAND LAUNCH AREA
MITTS	MOBILE IGOR TRACKING TELESCOPE SYSTEM
ML	MOBILE LAUNCHER
MODEM	MODULATOR/DEMODULATOR
MOTS	MOBILE OPTICAL TRACKING SYSTEM
MSFC	MARSHALL SPACE FLIGHT CENTER
MSOB	MANNED SPACECRAFT OPERATIONS BUILDING
MSS	MOBILE SERVICE STRUCTURE
OA	ORBITAL ASSEMBLY
OAT	OVERALL TEST
O2	OXYGEN
OIS	OPERATIONAL INTERCOMMUNICATIONS SYSTEM
OICC	OPERATIONS INTERFACE CONTROL CHART
OTV	OPERATIONAL TELEVISION
OWS	ORBITAL WORKSHOP
PA	PUBLIC ADDRESS
PAH	PULSE AMPLITUDE MODULATION
PCG	POWER CONDITIONING GROUP (AM)
PCM	PULSE CODE MODULATION
PCMD	PARTICLE COUNT MONITORING DEVICE
PCS	POINTING CONTROL SYSTEM (ATM)
PD	PROPELLANT DISPERSION
PDS	PROPELLANT DISPERSION SYSTEM
PI	PRINCIPAL INVESTIGATOR
PREPS	PREPARATIONS
PS	PAYLOAD SHROUD
PSI	POUNDS PER SQUARE INCH
PTCR	PAD TERMINAL CONNECTION ROOM
PTCS	PROPELLANT TANKING COMPUTER SYSTEM
PU	PROPELLANT UTILIZATION
PYRO	PYROTECHNIC

DECEMBER 29, 1972

. APOLLO/SATURN

PAGE

23

SV-45106

TEST NO.

SKYLAB 2

DATE:
REVISION

VEHICLE

QC	QUALITY CONTROL
QD	QUICK DISCONNECT
QLDS	QUICK LOOK DATA STATION
RACS	REMOTE AUTOMATIC CALIBRATION SYSTEM
RCS	REACTION CONTROL SYSTEM
RF	RADIO FREQUENCY
RICS	RANGE INSTRUMENTATION CONTROL SYSTEM
RLC	ROTATING LITTER CHAIR
RP-1	ROCKET PROPELLANT - 1
ROTI	RECORDING OPTICAL TRACKING INSTRUMENT
RSCR	RANGE SAFETY COMMAND RECEIVER
RSO	RANGE SAFETY OFFICER
RSS	REFRIGERATION SUBSYSTEM
RTC	REAL TIME COMMAND
RTCC	REAL TIME COMPUTER COMPLEX (MCC)
RTCS	REAL TIME COMPUTER SYSTEM (AFETR)
S&A	SAFE AND ARM
SA	SERVICE ARM
SAL	SCIENTIFIC AIRLOCK
SAS	SOLAR ARRAY SYSTEM
SAWS	SOLAR ARRAY WING SIMULATOR
SC	SPACECRAFT
SCAPE	SELF-CONTAINED ATMOSPHERIC PROTECTIVE ENSEMBLE
SCO	SPACECRAFT OPERATIONS
SCS	STABILIZATION AND CONTROL SYSTEM
SHE	SUPERCRITICAL HELIUM
SIM	SIMULATE
SIT	SOFTWARE INTEGRATED TEST
SLCC	SATURN LAUNCH COMPUTER COMPLEX
SLDS	SKYLAB LAUNCH DATA SYSTEM
SLR	SKYLAB RESCUE

SV TRANSFER PAD TO VAB (BP-30)
DECEMBER 29, 1972
ORIGINAL

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE

24
SV-45106
SKYLAB 2

SRO	SUPERINTENDENT OF RANGE OPERATIONS
STC	SPACECRAFT TEST CONDUCTOR
STON	SPACEFLIGHT TRACKING AND DATA NETWORK
STS	STRUCTURE TRANSITION SECTION
SV	SPACE VEHICLE
SWS	SATURN WORKSHOP
S-1B	SATURN 1B LAUNCH VEHICLE
S-1C	SATURN V 1ST STAGE
S-1I	SATURN 2ND STAGE
TACS	THRUST ATTITUDE CONTROL SUBSYSTEM (SWS)
TCE	TELEMETRY CHECKOUT EQUIPMENT
TCH	THRUST CHAMBER
TCP	TEST AND CHECKOUT PROCEDURE
TCS	TERMINAL COUNT SEQUENCER; THERMAL CONTROL SYSTEM (ATM)
TDDS	TELEVISION DATA DISPLAY SYSTEM
TDR	TIME DOMAIN REFLECTOMETER
TM	TELEMETRY
TRS	TIME REFERENCE SYSTEM
TSM	TAIL SERVICE MAST
TTY	TELETYPE
UDL	UP-DATA LINK
UHF	ULTRA HIGH FREQUENCY
UMB	UMBILICAL
USB	UNIFIED S-BAND
UV	ULTRAVIOLET
VAB	VEHICLE ASSEMBLY BUILDING
VCG	VECTORCARDIOGRAM
VHF	VERY HIGH FREQUENCY
VLF	VERY LOW FREQUENCY
VMGSE	VEHICLE MEASUREMENT GSE
WCIU	WORKSHOP COMPUTER INTERFACE UNIT
WITS	WEST INTEGRATED TEST STAND
WMS	WASTE MANAGEMENT SYSTEM (OWS)
W/R	WHITE ROOM
Z-LV	Z-AXIS PARALLEL TO LOCAL VERTICAL

SV TRANSFER PAD TO VAB (BP-30) . APOLLO/SATURN
DATE: DECEMBER 29, 1972
REVISION ORIGINAL

PAGE
TEST NO.
VEHICLE

25
SV-45106
SKYLAB 2

THIS PAGE INTENTIONALLY LEFT BLANK

DATE
REVISION

DECEMBER 29, 1972

ORIGINAL

SL-2 (BP-30) TRANSFER OPERATIONS PAD TO VAB

OPERATIONS INTERFACE CONTROL CHART

REF TCP SV 45106

DATE: 12/22/72
EFFECTIVITY: SL-2
REVISION: 1

LA-PLN

CONCURRENCE:

A. GOLDBERG LS

J.H. SLOGAR LV

R.E. WOODS SF-OPN

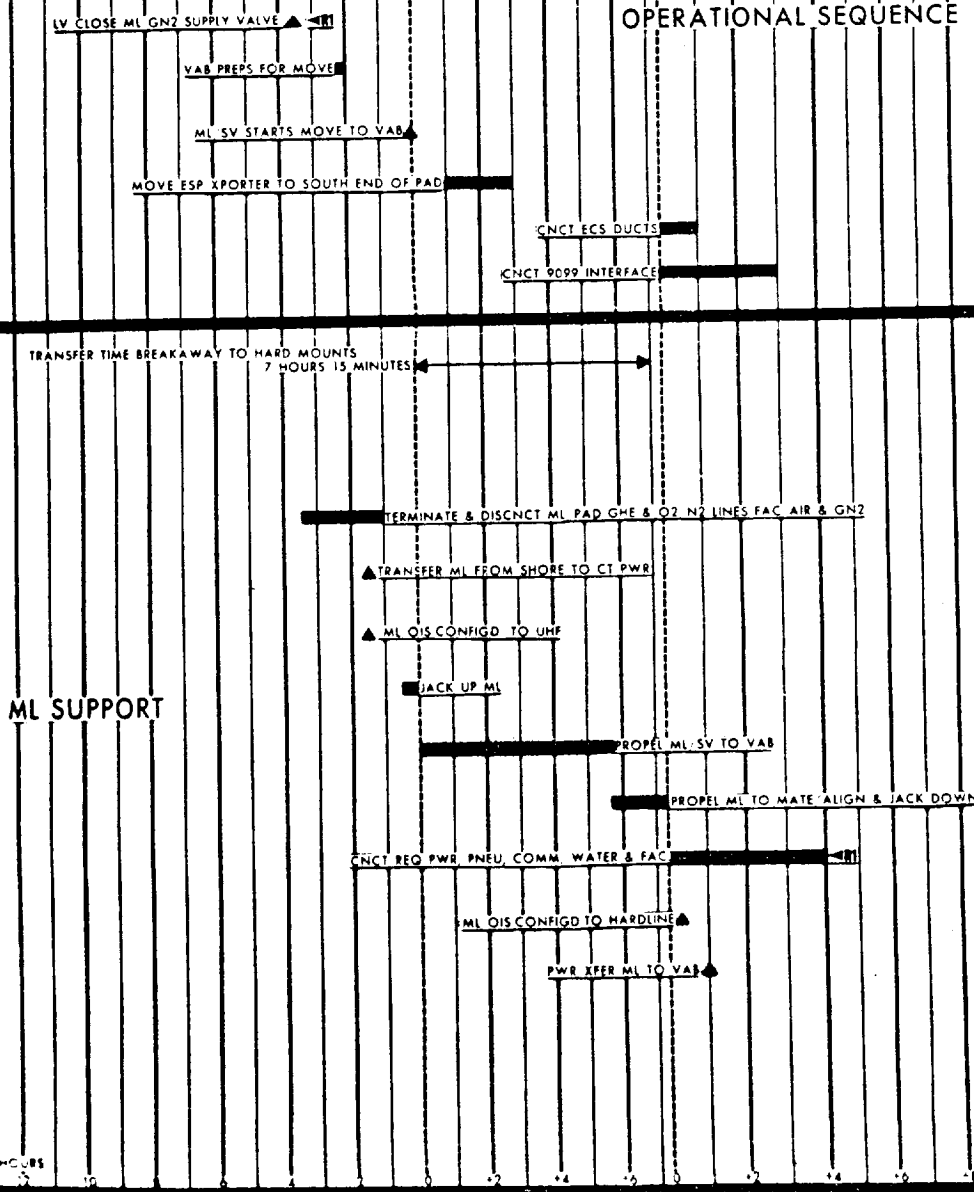
APPROVAL:

R.E. MOSER DCD

LEGEND

1-8 00.00.00

OPERATIONAL SEQUENCE



SV TRANSFER PAD TO VAB (BP-3D)

DECEMBER 29, 1972

DATE:

ORIGINAL

LAUNCH OPERATIONS

REVISION

PAGE

TEST NO.

VEHICLE

27
SV-45106
SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
<p>OPERATING STEPS</p> <p>-----</p> <p>*****WARNING*****</p> <p>* * IN THE EVENT AN * EMERGENCY ARISES DURING * MSS OR THE SPACE * VEHICLE TRANSFER * OPERATIONS, THE SKYLAB * SPACE VEHICLE TEST * SUPERVISOR EMERGENCY * PROCEDURES, TCP NO. * SV-46101, SHALL BE * IMPLEMENTED. *</p> <p>*****</p> <p>NOTE</p> <p>----</p> <p>HAZARDCUS OPERATIONS ARE DENOTED WITH THE LETTER "H" IN THE REMARKS COLUMN,</p>						
-11 HRS 01 00	181	1	CVTS	CLTC	VERIFY READY TO PROCEED WITH TRANSFER OPERATIONS PREPARATIONS.	
	181	2	CVTS	CPSS	VERIFY READY TO PROCEED WITH TRANSFER OPERATIONS PREPARATIONS.	
	188 (PA)	3	CVTS		THE COUNTDOWN WILL START ON MY MARK AT T-11 HOURS, 01 00. 5 - 4 - 3 - 2 - 1 - MARK.	

SV TRANSFER PAD TO VAB (BP-30)
 DATE DECEMBER 29, 1972
 REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 28
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-11 HRS 01 0"					NOTE ----- SECURING HOLDDOWN ARMS AND SHORT CABLE MAST, SECURING S-1B, S-IVB AND IU STAGES, DISCONNECTION OF PAD TO ML LV LH2 AND RP-1 LINES, AND DIS- CONNECTION TO PAD TO ML LOX LINES ARE SCHEDULED TO BEGIN AT THIS TIME,	
-9 HRS 30 0"					NOTE ----- ESP TRANSPORTER IS SCHEDULE TO BE MOVED TO THE NORTH SIDE OF THE COMPLEX AT THIS TIME,	
-7 HRS 30 0"					NOTE ----- SERVICE ARM TIP RETRACTION AND SECURING OF SERVICE ARMS ARE SCHEDULED TO BEGIN AT THIS TIME,	

SV TRANSFER PAD TO VAB (BP-30)

DATE: DECEMBER 29, 1972
REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 29
TEST NO. SV-45106
VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-6 HRS 01 00					<p>NOTE ----</p> <p>DISCONNECTION OF THE 9099 INTERFACE CABLES AND SECURING OF LV ECS IS SCHEDULED TO BEGIN AT THIS TIME.</p>	
-5 HRS 301 00	181	1	CLTC	CVTS	<p>BOEING CALMEC VALVES ARE CLOSED, CLEAR TO TERMINATE AND DISCONNECT THE ML/PAD GHE SYSTEM.</p> <p>NOTE ----</p> <p>TERMINATION AND DISCONNECTION OF ML/PAD GHE AND O2/N2 LINES IS SCHEDULED TO BEGIN AT T-3 HOURS, 301 00.</p>	
-4 HRS 301 00	181	1	CVTS	CTSC	<p>VERIFY REQUIRED PERSONNEL AND EQUIPMENT ARE ON STATION READY TO SUPPORT TEST OPERATION.</p>	
-3 HRS 301 00	181	1	CLTC	CVTS	<p>BOEING CALMEC VALVES ARE CLOSED, TERMINATE AND DISCONNECT THE FOLLOWING SYSTEMS</p> <p>(A) ML FACILITY AIR (B) ML GN2</p>	

SV TRANSFER PAD TO VAB (BP-30)
 DATE DECEMBER 29, 1972
 REVISED ORIGINAL

LAUNCH OPERATIONS

PAGE 30
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-3 HRS 30' 0"	181	2	CVTS	CTSC	BOEING CALMEC VALVES ARE CLOSED, TERMINATE AND DISCONNECT THE FOLLOWING SYSTEMS (A) ML FACILITY AIR (B) ML GN2 (C) ML/PAD GHE (D) O2/N2 LINES	H
-3 HRS 15' 0"	181	1	CTSC	CVTS	PROPELLING CT TO ML MATE POSITION,	
	181	2	CVTS	CPSS	PROPELLING CT TO ML MATE POSITION,	
-3 HRS 0' 0"	181	1	CLTC	CVTS	9099 INTERFACE CABLES ARE DISCONNECTED,	
	181	2	CVTS	CTSC	9099 INTERFACE CABLES ARE DISCONNECTED,	
-2 HRS 45' 0"	181	1	CTSC	CVTS	AIR CONDITIONING NOW BEING PROVIDED BY MRU,	
	181	2	CVTS	CLTC	AIR CONDITIONING NOW BEING PROVIDED BY MRU,	

SV TRANSFER PAD TO VAB (BP-30)

DATE: DECEMBER 29, 1972

MISSION: ORION

LAUNCH OPERATIONS

 PAGE 31
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-2 HRS 15' 0"					NOTE ---- VAB PREPS FOR MOVE ARE SCHEDULED TO BEGIN AT THIS TIME.	
-1 HR 45' 0"	181	1	CTSC	CVTS	ML POWER TRANSFER WILL OCCUR IN 15 MINUTES.	
	181	2	CTSC	CVTS	CONFIGURING ML OIS-RF TO UHF.	
	181	3	CVTS	CLTC	STARTING ML OIS TRANSFER - PAD HARDLINE TO CT UHF. CT OIS CHANNEL ASSIGNMENTS ARE IN EFFECT.	
-1 HR 30' 0"	181	1	CVTS	CLTC	VERIFY READY FOR ML POWER TRANSFER FROM PAD TO CT.	
	181	2	CTSC	CVTS	VERIFY READY FOR ML TRANSFER TO CT POWER.	
	181	3	CTSC	CVTS	ML TRANSFER TO CT POWER COMPLETE.	
	181	4	CVTS	CLTC	ML POWER TRANSFER IS COMPLETE.	
	181	5	CTSC	CVTS	ML OIS-RF CONFIGURED TO UHF.	
	181	6	CVTS	CLTC	ML OIS TRANSFER - PAD TO CT IS COMPLETE.	

SV TRANSFER PAD TO VAB (BP-30)
 DECEMBER 29, 1972
 ORIGINAL

LAUNCH OPERATIONS

PAGE 32
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 29' 0"	181	1	CVTS	CSTC	VERIFY THE 6000 PSI GN2 SUPPLY VALVE AT VALVE PANEL 14 HAS BEEN CLOSED.	
	181	2	CLTC	CVTS	VERIFY THAT S/C PERSONNEL HAVE CLOSED THE 6000 PSI GN2 SUPPLY VALVE AT VALVE PANEL 14.	
-30' 0"	181	1	CTSC	CVTS	REQUEST CLEARANCE TO JACK ML TO CLEARANCE HEIGHT.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE FOR ML JACKING OPERATIONS.	
	181	3	CVTS	CTSC	JACK ML TO CLEARANCE HEIGHT.	H
-15' 0"	181	1	CLTC	CVTS	LV AND SUPPORT EQUIPMENT SECURE FOR MOVE.	
TB-1 00' 0"	181	1	CTSC	CVTS	ML JACKED TO CLEARANCE HEIGHT. REQUEST CLEARANCE TO PROPEL ML TO VAB.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO PROPEL ML TO VAB.	
	181	3	CVTS	CTSC	PROPEL CLEAR OF MOUNTS AND PROCEED WITH TRANSFER OPERATIONS, REPORT PROGRESS EN ROUTE.	H
	188 (PA)	4	CVTS		THE COUNTDOWN WILL BE RESET TO T+0 AND PLUS COUNT WILL BE INITIATED AT ML/TRANSPORTER FIRST MOTION.	

SV TRANSFER PAD TO VAB (BP-30)
 DATE: DECEMBER 29, 1972
 REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 33
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
7B-1 +0' 0"	CONTINUED				<p>NOTE ----</p> <p>THE COUNTDOWN TIMES IN THIS PROCEDURE ARE BASED ON T+0 BEING TRANSPORTER FIRST MOTION. THE COUNTDOWN WILL CONTINUE INTO POSITIVE TIME AND WILL BE RESET TO T+0 WHEN ML IS HARD DOWN ON MOUNTS.</p>	
	181	5	CTSC	CVTS	ML/TRANSPORTER FIRST MOTION.	
					MOVE TIME (BREAK AWAY TO HARD MOUNTS) IS 7 HOURS AND 15 MINUTES.	
+3 HRS 45' 0"	181	1	CVTS	CLTC	VERIFY SA 9 IS CONFIGURED FOR VAB ENTRY.	
	181	2	CTSC	CVTS	VERIFY SA 9 IS CONFIGURED FOR VAB ENTRY.	
+4 HRS 15' 0"	181	1	CTSC	CVTS	ALERT VAB PLATFORM OBSERVERS TO BE ON STATION IN 60 MINUTES FOR COMM CHECK IN SUPPORT OF ML/VEHICLE ENTRY INTO VAB.	
	181	2	CVTS	CLTC	HAVE VAB PLATFORM OBSERVERS REPORT ON STATION IN 60 MINUTES FOR COMM CHECK.	

SV TRANSFER PAD TO VAB (BP-30)
 DATE DECEMBER 29, 1972
 REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 34
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
05 HRS 15' 0"	188 (PA)	1	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR SPACE VEHICLE ENTRY INTO THE VAB. *****WARNING***** * THE CONTROL AREA FOR * * THE SPACE VEHICLE ENTRY * * INTO THE VAB CONSISTS * * OF THE HIGH BAY GROUND * * FLOOR. * *****	
	181	2	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREA FOR SPACE VEHICLE ENTRY INTO THE VAB. VERIFY SAFETY PERSONNEL ON STATION TO SUPPORT SV ENTRY INTO THE VAB.	
05 HRS 45' 0"	181	1	CPSS	CVTS	THE CONTROL AREA IS CLEAR OF ALL NON-ESSENTIAL PERSONNEL. SAFETY IS READY FOR SPACE VEHICLE ENTRY INTO THE VAB.	
	181	2	CTSC	CVTS	REQUEST CLEARANCE TO PROPEL ML INTO VAB.	
	181	3	CVTS	CPSS	VERIFY CLEARANCE FOR ML AND SV TO ENTER THE VAB.	
	181	4	CVTS	CTSC	PROPEL ML TO MATE POSITION.	H
06 HRS 15' 0"	181	1	CTSC	CVTS	ML IN MATE POSITION. REQUEST CLEARANCE TO JACK DOWN.	

SV TRANSFER PAD TO VAB (BP-30)

DATE: DECEMBER 29, 1972

REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 35
TEST NO. SV-45106
VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+6 HRS 15: 0"	CONTINUED					
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO LOWER ML ON MOUNTS.	H
	181	3	CVTS	CTSC	LOWER ML ON MOUNTS.	
TB-2 +0: 0"						
	181	1	CTSC	CVTS	ML IS ON MOUNTS.	
	181	2	CVTS	CLTC	ML IS ON MOUNTS.	
	188 (PA)	3	CVTS		THE COUNTDOWN WILL BE RESET TO T+0 AND COUNTING UP ON MY MARK. 5 - 4 - 3 - 2 - 1 - MARK	
+0: 0"						
	181	1	CTSC	CVTS	CONFIGURING ML DIS-REF TO HARDLINE.	H
	181	2	CVTS	CLTC	STANDBY FOR ML DIS TRANSFER FROM CT TO VAB.	
	181	3	CLTC	CVTS	BOEING CALMEC VALVES ARE CLOSED. CONNECT AND PRESSURIZE THE FOLLOWING ML SYSTEMS (1) FACILITY AIR (2) GN2 (3) GHE	
	181	4	CVTS	CTSC	BOEING CALMEC VALVES ARE CLOSED. CONNECT AND PRESSURIZE THE FOLLOWING ML SYSTEMS (1) FACILITY AIR (2) GN2 (3) GHE	

SV TRANSFER PAD TO VAB (BP-30)
 DATE DECEMBER 29, 1972
 REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 36
 TEST NO. SV-45106
 VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
•0' 0"	CONTINUED				<p>NOTE ----</p> <p>9099 INTERFACE CONNECTION, ECS DUCT CONNECTION, VAB OIS RECONNECTION AND CONNECTION OF REQUIRED POWER, PNEUMATIC COMMUNICATIONS, WATER AND FACILITIES ARE SCHEDULED TO BEGIN AT THIS TIME.</p>	
•15' 0"	181	1	CTSC	CVTS	ML OIS-RF CONFIGURED TO HARDLINE.	
	181	2	CVTS	CLTC	ML OIS TRANSFER - CT TO VAB IS COMPLETE.	
•45' 0"	181	1	CTSC	CVTS	ML TRANSFER TO VAB POWER WILL OCCUR IN 15 MINUTES.	
•1 HR 0' 0"	181	1	CVTS	CLTC	VERIFY READY FOR ML POWER TRANSFER FROM CT TO VAB.	
	181	2	CTSC	CVTS	VERIFY READY FOR ML TRANSFER TO VAB POWER.	
	181	3	CTSC	CVTS	ML TRANSFER TO VAB POWER COMPLETE.	
	181	4	CVTS	CLTC	ML POWER TRANSFER FROM CT TO VAB IS COMPLETE.	

SV TRANSFER PAD TO VAB (BP-30)

DATE: DECEMBER 29, 1972

REVISION ORIGINAL

LAUNCH OPERATIONS

PAGE 37
TEST NO. SV-45106
VEHICLE SKYLAB 2

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
01 HR 01 00	181	5	CLTC	CVTS	LV SECURED FROM MOVE. END OF SV TRANSFER OPERATIONS - PAD TO VAB.	
01 HR 30 00	181	1	CTSC	CVTS	ML FIREX SYSTEM OPERATIONAL.	

SV TRANSFER PAD TO VAB (BP-30)
DATE DECEMBER 29, 1972
DE VAB-ON ORIGINAL

APOLLO/SATURN

PAGE
TEST NO.
VEHICLE

38
SV-45106
SKYLAR 2

THIS PAGE INTENTIONALLY LEFT BLANK

SV TRANSFER PAD TO VAB (BP-30)

DECEMBER 29, 1972

ORIGINAL

APOLLO/SATURN

DATE:
REVISION

PAGE
TEST NO.
VEHICLE

39
SV-45106
SKYLAB 2

APPENDIX A
EMERGENCY COMMUNICATIONS PROCEDURES

EMERGENCY COMMUNICATIONS PROCEDURES

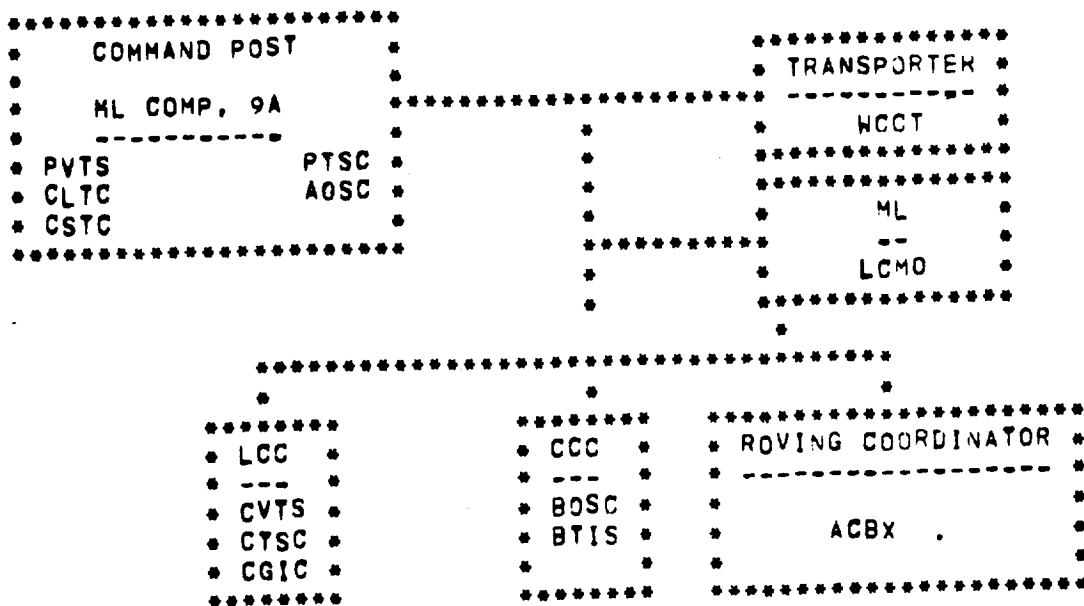
- A. IN THE EVENT OF AN OIS MICROWAVE FAILURE BETWEEN THE LCC AND THE TRANSPORTER DURING THE ML TRANSFER TO THE VAB,
1. THE ML OIS-RF WILL BE CONFIGURED IMMEDIATELY TO OPERATE WITH THE TRANSPORTER SYSTEM.
 2. A COMMAND POST WILL BE ESTABLISHED IN COMPARTMENT 9A OF THE MOBILE LAUNCHER AND COMMUNICATIONS WILL CONTINUE AS SHOWN BELOW, THE OPERATION WILL RESUME AS SOON AS A COMPLETE COMM CHECK HAS VERIFIED ALL STATIONS READY.
 3. THE 104 NET RADIO SYSTEM WILL BE UTILIZED TO MAINTAIN COMMUNICATIONS BETWEEN THE TRANSPORTER/ML UNIT AND THE LCC OR OTHER OUTLYING AREAS.

NOTE

THE TEST SUPPORT CONTROLLER REPRESENTATIVE ONBOARD THE MOBILE LAUNCHER WILL DETERMINE THE TOTAL EFFECT OF THE TRANSPORTER EITHER TO STOP, OR CONTINUE OPERATION UTILIZING 104 NET COMMUNICATIONS TO THE CCC BASE STATION.

DATE:
REVISION

IF AN OPERATIONAL IMPACT IS EVIDENT, SUPERVISION OF THE OPERATION WILL BE REORGANIZED AS FOLLOWS



EMERGENCY EVACUATION

THE APPLICABLE PA SYSTEM WILL BE UTILIZED FOR TRANSMISSION OF ANY EMERGENCY EVACUATION INFORMATION.

END OF TEST PROCEDURE SV-45106

LA-PLN-1 DISTRIBUTION FOR TCP SV-45106
TRANSFER PAD TO VAB - BP-30

1	DD-EDD	White	1	AFETR, DOOT	
2	IN-MSD-12	Stevens	2	AFETR, PAPP MU595	
3	IN-OIS-1	Parrish	1	MSFC/MO-E	Kimery
4	IN-OMO	Coonce	3	MSFC/MO-OL	Ladner
1	IS-DOC-2A	Lovan	1	QMSF/MAO	Holcomb
1	IS-PEM	Daley	2	BEN-2100, LCC 1R18	Ames
1	IS-PEM-B	Jansen	3	BEN-2320, VAB 1B6	Pope
1	IS-PEM-1	Gray	3	BEN-2350, HQ 1503	Compton
1	IS-PEM-2	Cullen	1	BEN-4120, HQ 2549	Reed
1	IS-PEM-22	Werden	2	BOFL-73, O&C 2116	Larson
1	IS-PEM-4	Jamieson	1	BOFL-73, O&C 2116	Weinberg
3	IS-SEC	Horner	5	BOFM-36, VAB 2L4	Melton
1	IS-TSM	Brown	2	BOFM-39, VAB 2L10	Scholz
1	LA-PLN	Moser	1	BOFO-31, O&C 3121	Kramp
3	LCC 4R8	Test Super.	2	BOFS-00, K6-1045	Ballard
1	LS-OPN	Page	2	BOFT-00, VAB 7E14	Maxwell
1	LS-OPN-2	Reyes	1	CHRY-16, VAB 15B9	O'Dell
1	LS-OPN-3	Proffitt	1	FEC-200, MC-336, 123	Stein
1	LV-A	Rigell	1	FEC-300, CIF 310	Dell
1	LV-GDC	Lealman	1	FEC-810, M6-339	Boessow
1	LV-OMO-1	Oglesby	1	FEC-820, M6-339, 202	Tveter
1	LV-OMO-3	Youmans	1	FEC-870, M6-138, 117	Deeter
1	LV-PLN	Nagle	1	GF-AS, O&C 3018	Fowler
1	SF-OPN	Woods	3	IBM-G18, VAB 2N5	Witt
1	SO	Gorman	1	NR, ZK-2B, VAB 2M2	Perry
1	SO-OPN-1	Pyles	1	NR, ZK-20, O&C 3079	Nurnberg
1	TS	Minderman	1	NR, ZK-49, O&C 3088	Cloyd
1	TS-MET	Amman	2	NWSI-D	Library
1	TS-NTS-1	Huber	1	TGS, VAB 3A7	Bamforth
1	TS-OSM	Gramling	10*	LA-PLN-1	Griffin
2	TS-OSM	Smith			
3	KM	Williams			
1	KM-LPG	Rosenthal			
3	AFETR, DONO				
2	AFETR, DOOP				

107 TOTAL

* ORIGINAL AND EXTRA COPIES TO BE FORWARDED TO S. J. JEVITT,
O&C, ROOM 2041

Changes to this Distribution list shall be made by sending an AVO with
justification to LA-PLN-1, ATTENTION: R. B. Battin. 12/29/72-1